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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,260	10/03/2001	Noriyuki Suzuki	011268	8663

23850 7590 12/06/2004

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
1725 K STREET, NW  
SUITE 1000  
WASHINGTON, DC 20006

EXAMINER
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WYROZEBSKI LEE, KATARZYNA I

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/926,260	SUZUKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Katarzyna Wyrozebski	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8 and 10-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

In view of applicant's amendment and response dated 9/20/2004 following final office action is issued. Applicant's declaration has been considered, however it does not overcome the prior art of MATABAYAS. Rejection over the prior art of MATABAYAS is incorporated here by reference.

***Claim Rejections - 35 USC § 102***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 8, 10-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Matabayas (WO 98/29499).

The discussion of the disclosure of the prior art of MATABAYAS from paragraph 2 of the office action mailed on 7/9/2003 is incorporated here by reference.

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The prior art of MATABAYAS is still applicable against present claims for the following reasons: MATABAYAS clearly states that both treated or untreated platelets can be dispersed in the dispersing medium such as water and glycols prior to or during contact with polyester components such as monomers (page 10, lines 3-6). In example on page 22 (line 9) discloses that the oligomer as well as monomer can be utilized and then polymerized to form a polyester

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nanocomposite. Use of untreated clays is therefore clearly envisaged and otherwise taught in the disclosure of MATABAYAS.

Newly added claims contain subject matter of cancelled claims 1-7 and 9.

3. The prior art of BEALL is overcome since it does not teach polymerization of low molecular weight component *in situ* with clay platelets.

4. In the response filed on 9/20/2004 the applicants argued following:

a) The examples of prior art of MATABAYAS disclose incorporating clay platelets into water and drying them before they are incorporated into clay platelets and therefore before polymerization.

With respect to the above argument the examiner would like to note that the while examining the application, an entire disclosure has to be considered and not only the examples. The disclosure as pointed out earlier clearly teaches that the clay platelets can be dispersed in dispersing medium at the same time as they are dispersed in the monomeric component. At the same time MATABAYAS utilizes oligomeric polyesters or pre-polymers for polymerization.

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The fact remains that the prior art of MATABAYAS discloses, teaches or otherwise suggests mixing clay, monomer or prepolymer and water or other dispersing medium together.

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b) The applicants provide declaration by the applicant, Mr. Suzuki, who compared the process described in the present invention with process in which the layered silicate is mixed with water then dried and then subjected to the polymerization.

With respect to the above argument, the examiner definitely appreciates time it took to put together such declaration and conduct the experiment. However, it is examiner's position that such declaration does not disqualify the prior art of MATABAYAS as applied against present claims for following reasons:

When comparing to the examples of the prior art of MATABAYAS, it is not clear exactly how much of clay component the applicants have utilized, and the clay is not the same. (What is cation exchange capacity of the clay the applicants utilized in an example in the declaration. Also depending where clay comes from its swelling capability may be different. Second, the polyester component is not the same component as that in the prior art of MATABAYAS. Applicants utilized BHET monomer, whereas the prior art of MATABAYAS utilizes oligomeric ethylene terephthalate (number average molecular weight of 377 g/mol). Third, the applicants disclosed examples where the clay platelet has been dried before incorporating into polyester component, whereas the prior art of MATABAYAS envisaged the above method as well as the one where dispersant, clay and oligomer can be mixed together. With respect to the applicant's summary of the results with circles and other symbols such as viewed as subjective since they do not provide any quantitative measure.

If applicants feel that an interview may solve any issues and further advance the prosecution of this application such is highly solicited.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

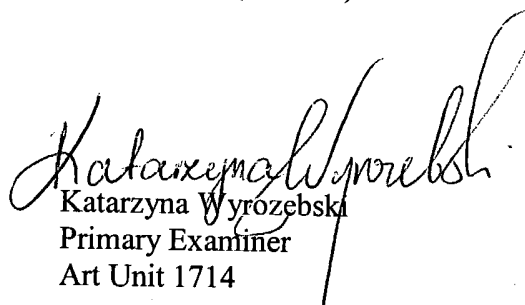
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski whose telephone number is (571) 272-1127. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Katarzyna Wyrozebski  
Primary Examiner  
Art Unit 1714

November 29, 2004

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